



# River Flood Risk Increasing

## Transition to Wetter Weather This Weekend

[Click Here for the Latest 7-day Forecast Rainfall Graphic](#)

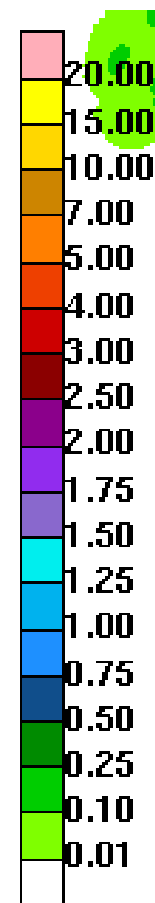
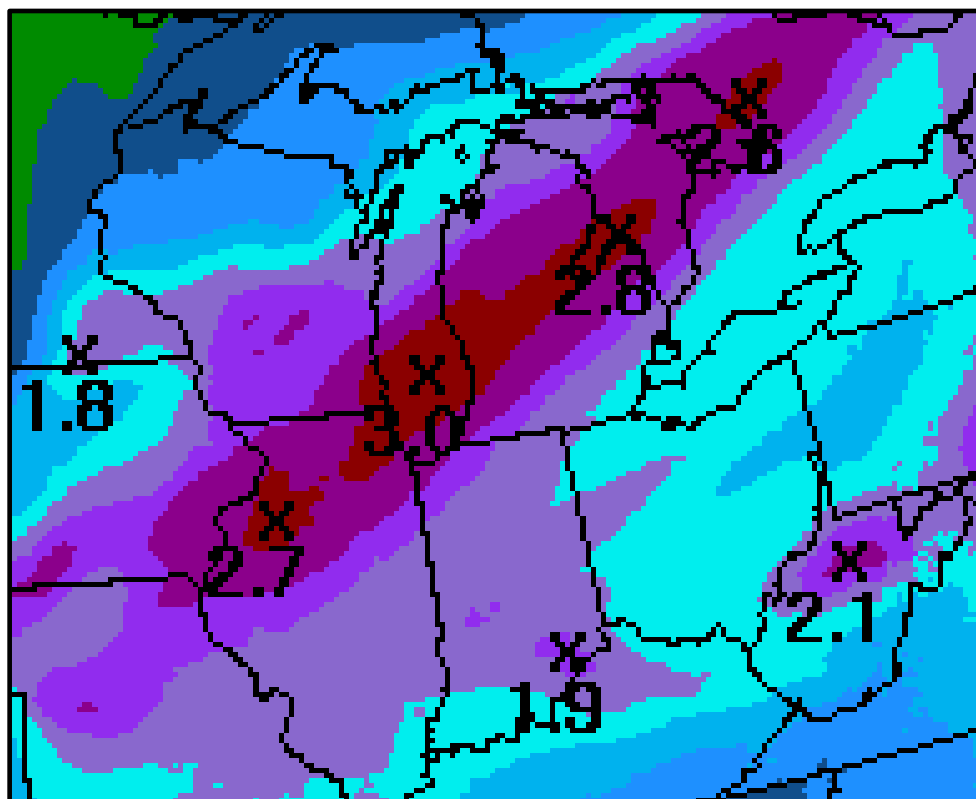
### Total Rain Forecast: April 10-17

As of 7am April 10

More than 2 inches of Rain Likely  
to result in Minor Flooding, Some  
Moderate Flooding Possible

Any Minor and Moderate  
Flooding Will Continue through  
Next Week

Additional Rainfall Possible  
Late Next Week





# Outlook for the Next Week

## Transition to Wetter Weather This Weekend

[Click Here for the Latest 7-day Forecast Rainfall Graphic](#)

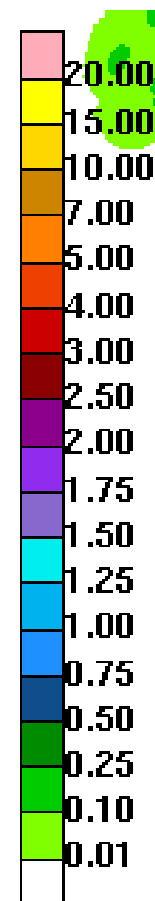
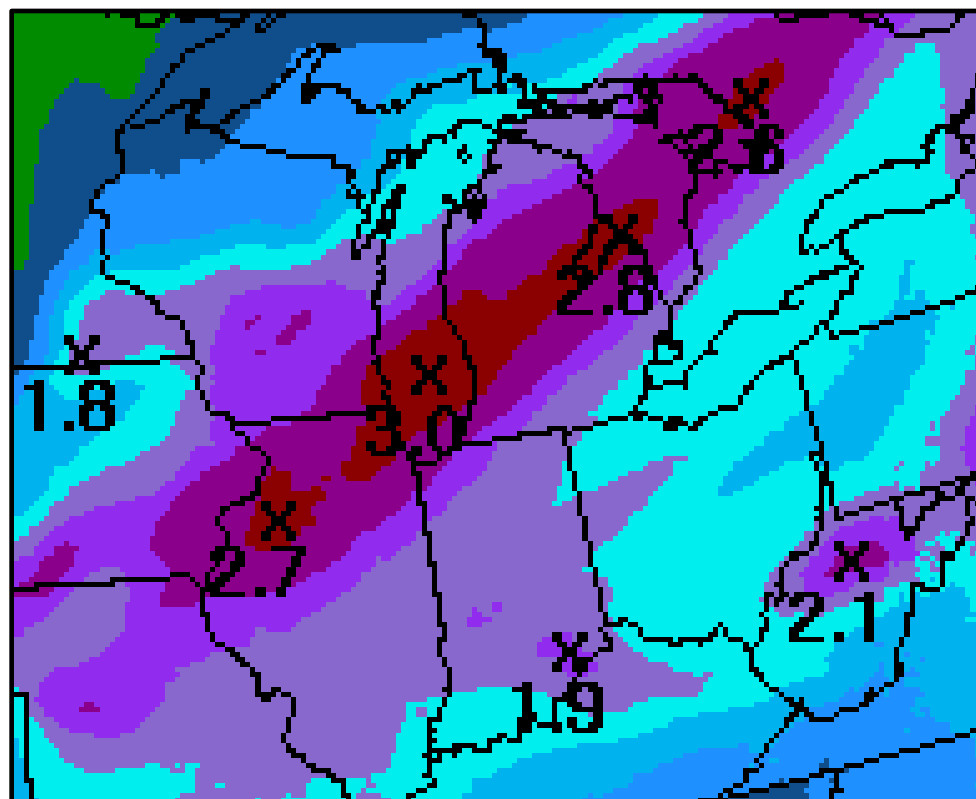
### Total Rain Forecast: April 10-17

As of 7am April 10

#### River Basins At Risk for Heaviest Rainfall Include

(As of April 10)

Muskegon River  
Rifle River  
Grand River  
Saginaw River  
Kalamazoo River  
Pine River  
Shiawassee River  
Tittabawassee River



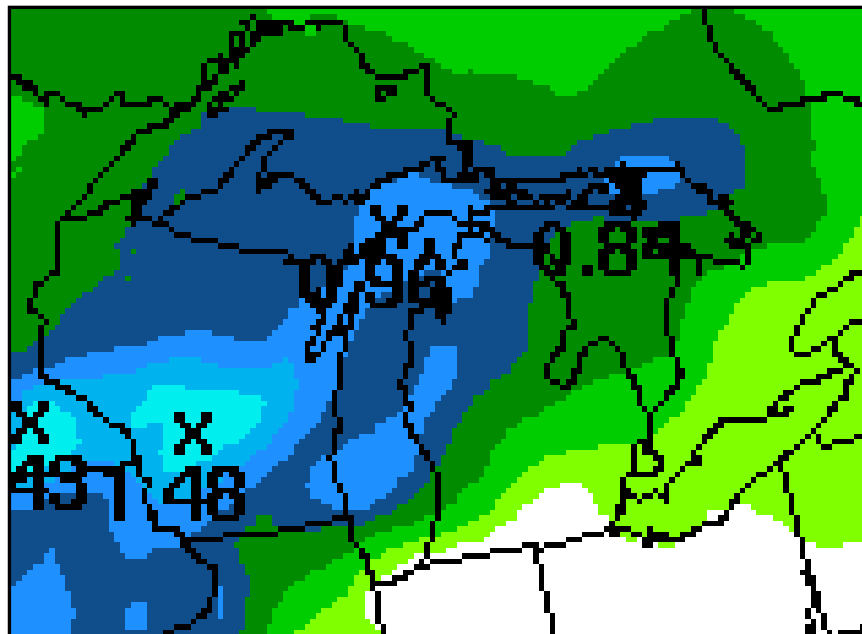


# Rain Likely into Next Week

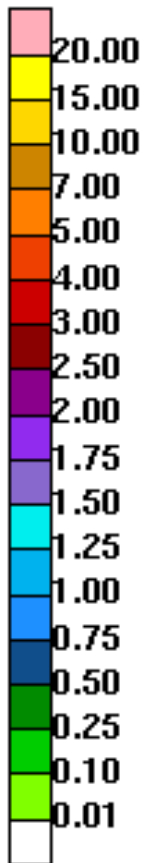
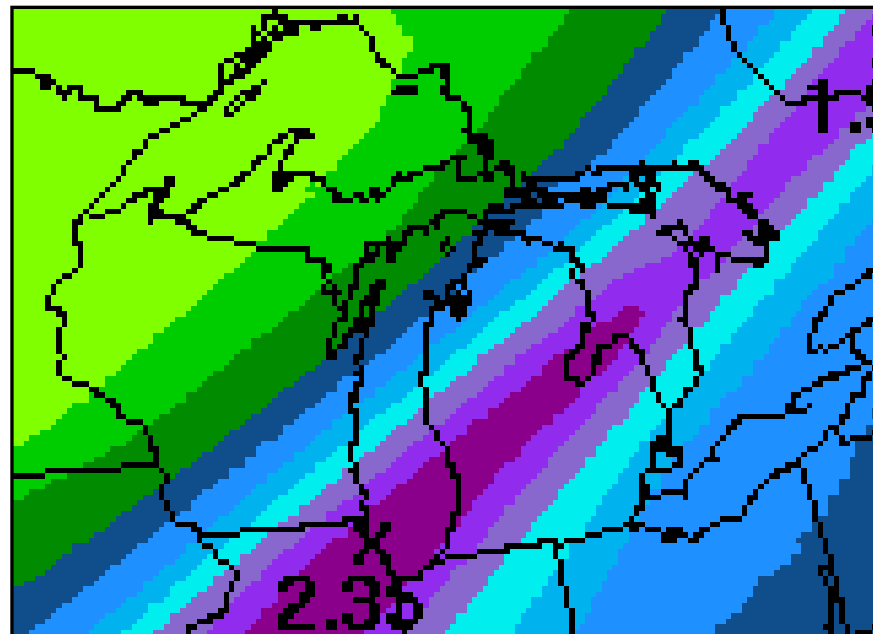
## April 12-15

[Click Here for the Latest 7-day Forecast Rainfall Graphic](#)

**April 12, 2014**



**April 13-15, 2014**





# River Levels Compared to Past Years

## Most Rivers Currently At or Above Normal



### Lower Michigan Streamflow Percentile - Wednesday, April 09, 2014

Created: 9:17 AM EDT  
Source: NWS National  
Digital Forecast Database

#### Percentile

- < 3% (Low)
- 3 - 9% (Much Below)
- 10 - 23% (Below)
- 24 - 74% (Normal)
- 75 - 89% (Above)
- 90 - 96% (Much Above)
- > 96% (High)

Created by the National Weather Service  
Forecast Office Grand Rapids, Michigan



0 25 50 Miles



# Flood Terminology

## Major Flooding

Extensive Inundation - Road, Structure, Communities  
Evacuations

Movement of Property to Higher Elevations

## Moderate Flooding

Some Inundation - Road, Structure, Communities  
Possible Evacuations

Movement of Property to Higher Elevations

## Minor Flooding

Minimal Property Damage,  
Public Inconvenience



# Best and Worst Case Scenarios



## Best Case - Would Help Lessen Flood Threat If...

- Spaced Out Smaller Rainfall Events - Allowing Drainage to Occur
- Avoid Heavy Rainfall Events that occur over all Michigan
- Slow Melt in northern Lower and Upper Peninsula

## Worst Case - Would Increase Flood Threat If...

- Significant Intense Rainfall Happens at Once or Multiple Times (like April 2013)
- Heavy Rainfall Occurs Across Entire Basins - especially the Headwaters
- Rapid Melting from Long Stretches of Warm Days in northern Lower and U.P.
- Heavy Rain Over Places With Snow on the Ground



# Keep in Mind

Ground Will Not Absorb Much Water – if any at all

Snowpack in northern Lower and U.P  
Will Not Absorb Much Rain at all from now on

Ice Remains an Unpredictable Factor  
for Flooding Up North

Many Rivers are near to above Bank Full  
Over an inch of rain in a short period of time could lead to Minor Flooding.

More than an inch of rain multiple times in quick succession or two or more  
inches at one time could mean Moderate flooding



# Water in the Snow Pack

## This Month compared to Last Month

Modeled Snow Water Equivalent

Upper Peninsula Water in the Snow Pack Remains Well Above Normal  
Far Northern Lower Still Above Normal As Well

**April 10, 2014**

**March 14, 2014**

